

CLAIMS

What is claimed is:

1. A turbo decoding system, comprising:
 - a decoder module, using an adaptive abort criterion to halt iteration;
 - wherein the adaptive abort criterion is executed without variable division.
2. The system of Claim 1, wherein the abort criterion is based on the mean and variance of partially decoded extrinsics.
3. The system of Claim 1, wherein the abort criterion is based on a ratio of the mean and variance of partially decoded extrinsics.
4. An iterative decoder system, comprising:
 - a decoder module, wherein estimates of data symbols are generated through an iterative decoding process;
 - a comparison algorithm for comparing a derived quality attribute of the generated data symbol estimates to a predetermined threshold;
 - wherein the comparison algorithm is executed without variable division;
 - and wherein decoding is aborted based on the comparison result.
5. The system of Claim 4, wherein the quality attribute is based on the mean and variance of the estimates of data symbols.
6. The system of Claim 4, wherein the quality attribute is based on a ratio of the mean and variance of the estimates of data symbols.

7. The system of Claim 4, wherein the quality attribute is generated without variable division.

8. A method for determining an abort criterion in iterative decoding comprising the steps of:

generating estimates of data symbols;

generating a quality attribute based on the estimates;

comparing the quality attribute to a predetermined threshold;

aborting the turbo decoding based on the comparison result;

wherein the quality attribute is generated without division functions.

9. The method of Claim 8, wherein the quality attribute is based on the mean and variance of the estimates of data symbols.

10. The method of Claim 8, wherein the step of comparing is implemented without division functions.

11. A method for determining an abort criterion in iterative decoding, comprising the steps of:

(a.) generating estimates of data symbols after an iteration substep;

(b.) measuring the mean of the estimates;

(c.) measuring the variance of the estimates;

(d.) generating a quality attribute based on the mean and the variance;

(e.) comparing the quality attribute to a predetermined threshold; and

(f.) aborting the turbo decoding based on the comparison result;

wherein steps (b), (c), (d), and (e) are implemented without division functions.

12. The method of Claim 11, wherein the quality attribute is based on a ratio of the mean and the variance of the estimates.

13. An iterative decoder system for a recursive systematic encoder, comprising:
a decoder module, wherein estimates of data symbols are generated through an iterative decoding process;
a comparison algorithm for comparing a quality attribute of the generated data symbol estimates to a predetermined threshold;
wherein the quality attribute is based on the mean and the variance of the estimates;
wherein decoding is aborted based on the result of said comparison; and
wherein the mean and variance for the estimates and the comparison algorithm are implemented without division functions.

14. The system of Claim 13, wherein the quality attribute is based on a ratio of the mean and variance of the estimates.